39/PRTS

DESCRIPTION

Asset Management System and ~~Asset Management~~ Method

Technical Field

This invention relates to a system and a method for asset management for managing an essence. Also, this invention relates to a production system and a production method for creating a project from an essence. Also, this invention relates to an archiving system and an archiving method for archiving an essence. Also, this invention relates to a distribution system and a distribution method for allotting an essence. Also, this invention relates to an authoring system and an authoring method for creating a package medium from an essence. Also, this invention relates to a production system and a production method for creating a programme from an essence. Further, this invention relates to a production system for creating an essence and a control method thereof.

Background Art

Recently, standardization on metadata is going on in SMPTE (Society of Motion Picture and Television Engineers) and the semantics for an essence specifying the contents or a wrapper meaning metadata and the essence combined together have been defined. Moreover, proposals have been made for the KLV (key length value) protocol or the UMID (unique material identifier) as a data structure of metadata and

for a metadata dictionary as a collection of specified metadata per se, and the corresponding standardization is also proceeding.

Meanwhile, in a broadcasting station, shortage in programme software is posing a problem due to advent of multiple channels and multi-media, so that it is becoming crucial how the programme software is procured to improve the services as the cost is minimized and as the programme quality, that is the quality of the contents, is maintained. This is tantamount to how video/audio data can be processed efficiency in the sequence of the processing operations from acquisition and preparation until editing, transmission and archiving, such that medium asset management including a structure of an archiving system for re-utilization of past programmes is an incumbent task.

Disclosure of the Invention

It is therefore an object of the present invention to provide an asset management system and an asset management method for managing the essence so that a sequence of operations from acquisition and formulation until editing, transmission and archiving will be managed efficiently.

It is another object of the present invention to provide a production system and a production method which can create a project from an essence efficiently.

It is another object of the present invention to provide an archiving system and an archiving method which can archive an essence efficiently.

It is another object of the present invention to provide a distribution system and a distribution method which can allot the essence efficiently.

It is another object of the present invention to provide an authoring system and an authoring method which can create a package medium efficiently from an essence.

It is another object of the present invention to provide an asset management system and an asset management method which can manage an essence efficiently.

It is a further object of the present invention to provide a production system for creating an essence efficiently and a control method thereof.

In its one aspect, the present invention provides an asset management system for managing an essence, including means for creating the essence and for generating metadata for explaining the essence when creating the essence, means for archiving the essence and the metadata correlatively with each other, and means for controlling an operation performed on the archived essence based on the metadata to realize asset management for the essence.

In another aspect, the present invention provides an asset management system for managing an essence, including means for generating the information for explaining the essence, means for recording and/or reproducing the essence and the information correlatively with each other, and means for managing and/or controlling a recording and/or reproducing operation of the essence based on the information to effect asset management for the essence.

In another aspect, the present invention provides an asset management system

for managing an essence, including means generating the information specifying attributes of the essence, recording the essence and the information correlatively with each other on a recording medium to reproduce the essence from the recording medium and control means for controlling the recording and/or reproducing operations for the essence based on the information to effect asset management for the essence.

In another aspect, the present invention provides an asset management method for managing an essence, including creating the essence and for generating metadata for explaining the essence when creating the essence, correlating the essence and the metadata with each other, and controlling an operation performed on the archived essence based on the metadata to realize asset management for the essence.

In another aspect, the present invention provides an asset management method for managing an essence, including generating the information for explaining the essence and controlling the recording and/or reproducing operation of recording and/or reproducing the essence and the information correlatively with each other based on the information to effect asset management for the essence.

In another aspect, the present invention provides an asset management method for managing an essence, including generating the information specifying attributes of the essence, recording the essence and the information correlatively with each other on a recording medium and controlling the recording and/or reproducing operations for the essence based on the information to effect asset management for the essence.

In its one aspect, the present invention provides a production system for

creating a project from an essence; production for creating the essence and for generating metadata for accounting for the essence; and post-production of creating the project from the essence using metadata generated at the time of the production.

In another aspect, the present invention provides a production system for creating a project from an essence; production for creating the essence and for generating metadata for accounting for the essence; and post-production of creating the project from the essence; wherein an operation of the post-production is controlled based on metadata generated at the time of the production.

In another aspect, the present invention provides a production method for creating a project from an essence; creating the essence and generating metadata used for accounting for the essence; and creating the project from the essence using the metadata.

In another aspect, the present invention provides a production method for creating a project from an essence; creating the essence and generating metadata used for accounting for the essence; and controlling an operation of post-production based on the metadata to create the project from the essence.

In its one aspect, the present invention provides a production system for creating a project from an essence, comprising: pre-production for creating metadata used for accounting for the essence; production for performing an operation for creating the essence, using the metadata; and post-production for creating the project from the essence.

In another aspect, the present invention provides a production system for creating a project from an essence, comprising: a pre-production for creating metadata used for accounting for the essence; a production for creating the essence and for storing the essence and the metadata correlatively with each other on a recording medium; and a post-production for creating the project from the essence; wherein an operation in the production is performed using the metadata generated at the time of the pre-production.

In its one aspect, the present invention provides an archiving system for archiving an essence, comprising: production for creating the essence and for generating metadata used for accounting the essence; archiving means for archiving the essence and the metadata correlatively with each other; and means for controlling the archiving means so that an operation for the essence will be performed using the metadata.

In another aspect, the present invention provides an archiving system for archiving an essence, comprising: production for creating the essence and for generating metadata used for accounting the essence; archiving means for archiving the essence and the metadata correlatively with each other; and controlling means for controlling the archiving means so that asset management for the essence archived by the archiving means will be performed based on the metadata.

In another aspect, the present invention provides a method for archiving an essence, comprising: creating the essence and generating metadata used for accounting

the essence; performing an operation for the essence using the metadata; and archiving and essence and the metadata correlatively with each other.

In another aspect, the present invention provides a method for archiving an essence, comprising: creating the essence and generating metadata pertinent to the essence; and performing control based on the metadata so that an asset management for the essence archived will be performed to archive the essence and the metadata correlatively with each other.

In its one aspect, the present invention provides a distribution system for allotting an essence, comprising: a production for creating the essence and for generating metadata pertinent to the essence; a post-production for performing post-production processing on the essence; and distribution means for allotting the essence using metadata generated at the time of the production.

In another aspect, the present invention provides a distribution system for allotting an essence, comprising: a production for creating the essence and for generating metadata pertinent to the essence; a post-production for performing post-production processing on the essence; and distribution means for allotting the essence; wherein an operation of the distribution means is controlled using the metadata used at the time of the production.

In another aspect, the present invention provides a distribution method for allotting an essence, comprising: creating the essence and generating metadata pertinent to the essence; performing post-production processing on the essence; and

allotting the essence using metadata generated at the time of the production.

In another aspect, the present invention provides a distribution method for allotting an essence, comprising: creating the essence and generating metadata pertinent to the essence; performing post-production processing on the essence; and controlling an operation of distribution, using the data, to allot the essence.

In its one aspect, the present invention provides an authoring system for creating a package medium from an essence, comprising: a production for creating the essence and for generating metadata pertinent to the essence; a post-production for performing post-production on the essence; and authoring means for creating the package medium from an essence processed with post-production, using metadata generated at the time of the production.

In another aspect, the present invention provides an authoring method for creating a package medium from an essence, comprising: creating the essence and generating metadata pertinent to the essence; performing post-production on the essence; and creating the package medium from an essence processed with post-production using metadata.

In another aspect, the present invention provides an authoring method for creating a package medium from an essence, comprising: generating metadata pertinent to the essence; creating the essence; performing post-production on the essence; and creating the package medium from an essence processed with post-production using the metadata.

In its one aspect, the present invention provides an asset management system for managing an essence, comprising: a pre-production for generating metadata indicating the rights of the essence and; a production for creating the essence; asset management means for performing asset management processing on the essence; and means for controlling the asset management means so that a circulation operation of the essence will be performed based on the metadata.

In another aspect, the present invention provides an asset management system for managing an essence, comprising: means for creating the essence and for generating metadata specifying rights pertinent to the essence; asset management means for performing asset management processing on the essence; and means for controlling the asset management means, based on the metadata, so that a circulating operation of the essence will be performed based on the metadata.

In another aspect, the present invention provides an asset management method for managing an essence, comprising: generating metadata indicating the rights of the essence; creating the essence; and performing control based on the metadata so that a circulating operation of the essence will be performed to effect asset management processing on the essence.

In another aspect, the present invention provides an asset management method for managing an essence, comprising: creating the essence and for generating metadata specifying rights pertinent to the essence; and performing control based on the metadata so that a circulation operation of the essence will be performed to effect asset

management processing for the essence.

In its one aspect, the present invention provides a production system for creating a programme from an essence, comprising: a production for creating the essence and for generating UMID (unique material identifier) for discriminating the essence; a post-production for editing the essence for generating the programme; and means for controlling an operation in the post-production based on the UMID.

In another aspect, the present invention provides a production method for creating a programme from an essence, comprising: creating the essence and for generating UMID (unique material identifier) for discriminating the essence; and controlling an operation in the post-production based on the UMID to edit the essence to generate the programme.

In its one aspect, the present invention provides a production system for creating an essence, comprising: means for generating a plurality of metadata which are data pertinent to the essence and which are respectively identified by SMPTE (Society of Motion Picture and Television Engineers) labels; means for receiving the essence and the plural metadata and analyzing the SMPTE labels to extract pre-set metadata from the plural metadata; and means for controlling the processing relevant to the essence based on the extracted metadata.

In another aspect, the present invention provides a control method of a production system for creating an essence, comprising: generating a plurality of metadata which are data pertinent to the essence and which are respectively identified

by SMPTE (Society of Motion Picture and Television Engineers) labels; receiving the essence and the plural metadata and analyzing the SMPTE labels to extract pre-set metadata from the plural metadata; and controlling the processing relevant to the essence based on the extracted metadata.

Brief Description of the Invention

Fig.1 shows a system structure showing the structure of a programme creation and distribution system embodying the present invention.

Fig.2 shows a system structure showing the structure of a production system in the programme creation and distribution system.

Figs.3A and 3B schematically show a data structure of the SDI format.

Figs.4A and 4B schematically show a data structure of the SDTI format.

Fig.5 schematically shows a data structure of the SDTI-CP format.

Fig.6 schematically shows a data structure of the KLV format.

Fig.7 schematically shows a data structure of UMID.

Fig.8 shows contents of a metadata dictionary which is a dictionary rule taking a universal label standardized in the SMPTE298M into keys.

Fig.9 shows the contents of a metadata dictionary.

Fig.10 shows the contents of a metadata dictionary.

Fig.11 shows the contents of a metadata dictionary.

Fig.12 shows the contents of a metadata dictionary.

Fig.13 shows the contents of a metadata dictionary.

Fig.14 shows the contents of a metadata dictionary.

Fig.15 shows the contents of a metadata dictionary.

Fig.16 shows the contents of a metadata dictionary.

Fig.17 shows the contents of a metadata dictionary.

Fig.18 shows the contents of a metadata dictionary.

Fig.19 shows the contents of a metadata dictionary.

Fig.20 shows the contents of a metadata dictionary.

Fig.21 shows the contents of a metadata dictionary.

Fig.22 shows the contents of a metadata dictionary.

Fig.23 shows the contents of a metadata dictionary.

Fig.24 shows the contents of a metadata dictionary.

Fig.25 shows the contents of a metadata dictionary.

Fig.26 shows the contents of a metadata dictionary.

Fig.27 shows the contents of a metadata dictionary.

Fig.28 shows the contents of a metadata dictionary.

Fig.29 shows the contents of a metadata dictionary.

Fig.30 shows the contents of a metadata dictionary.

Fig.31 shows the contents of a metadata dictionary.

Fig.32 shows the contents of a metadata dictionary.

Fig.33 shows the contents of a metadata dictionary.

Fig.34 shows the contents of a metadata dictionary.

Fig.35 shows the contents of a metadata dictionary.

Fig.36 shows the contents of a metadata dictionary.

Fig.37 shows the contents of a metadata dictionary.

Fig.38 schematically shows the structure of an asset management system along with the processing sequence of the programme creation and distribution operation in the programme preparation and distribution system.

Fig.39 is a flowchart for illustrating the programme preparation distribution operation in the programme preparation and distribution system.

Best Mode for Carrying Out the Invention

Referring to the drawings, preferred embodiment of the present invention are explained in detail.

The present invention is applied to a programme preparation and distribution system 100 configured as shown for example in Fig.1.

This programme preparation and distribution system 100 includes a distributed programme editing system 10, connected over a gigabit Ethernet 1, a production system 20, a news system 30, an archive system 40, a programme distribution system 50 and an acquisition system 60 for acquiring the video or audio to be furnished to the production system 20.

The programme preparation and distribution system 100 is a system for so-

called pre-production processing prior to shooting in which a producer or a director and the staff members consult as to the programme distribution contents. The persons concerned in preparing a programme are adapted to consult on the programme distribution contents through plural workstations connected t othe gigabit Ethernet 1.

The production system 20 is a system for shooting and programme preparation by image or speech collection and includes a recording management system 21 in which recording staff members input necessary items, a production management system 22, an ingest system 23 for storing the video or audio acquired by the acquisition system 60, a coding system 24 for coding processing of the speech or the audio, an editing/ processing system 25 for editing the speech or the audio, and a CG creation system 26 for displaying an image in superposition by computer graphics (CG) to crate a weather map or letters, as shown for example in Fig.2.

The recording management system 21 is made up of plural workstations 21A, connected to the gigabit Ethernet 1, and is adapted to permit a news writer to enter an article through the workstations 21A. The production management system 22 is made up e.g., of a device controller 22A and an A/V server 22B, connected to the gigabit Ethernet 1. The ingest system 23 is made up of a reproducing device23A for reproducing the video or audio recorded on a video tape, a telecine device 23B for converting an image imaged on a film into video signals, and a plurality of ingest clients 23C connected to the gigabit Ethernet 1, and is configured for storing the video or the audio acquired by the acquisition system 60 through the reproducing device23A

and the telecine device 23B on the ingest clients 23C. The coding system 24 is made up of a coding controller 24A, an MPEG encoder 24B and an MPEG decoder 24C, connected to the gigabit Ethernet 1. The editing/ processing system 25 is made up of an off-line editing device 25A, an on-line editing device 25B, a video processing device 25C and an audio processing device 25D.

The news system 30 is a system for collectively managing the news information and manages on-air items and materials, that is manages which material is undergoing which stage of processing.

The archive system 40 is a system preserving video and audio data, and includes an archive manager 40A and a petasite 40B, connected to the gigabit Ethernet 1. In the petasite 40B are preserved essence and metadata.

The programme distribution system 50 includes a server controller 51, an authoring system 52, a web system 53 and an on-air server 54, connected to the gigabit Ethernet 1. The programme distribution system 50 also includes a routing switch 55 for selecting the on-air programme.

The acquisition system 60 is made up of a video camera 61, a relaying car 62 etc.

This programme preparation and distribution system 100 is a picture processing system in which a broadcasting station, a video producing firm etc has the functions of recording the video or the audio, referred to below as material, editing and processing these materials to prepare a picture for distribution, and of preserving the

pictures. In the picture processing steps, such as recording, editing or preserving the materials, the supplementary information for discriminating the materials in detail is inputted to the recording medium or a dedicated recording server in the picture processing steps, such as recording, editing or preserving the materials.

As the supplementary information, metadata is used. The metadata denotes data for stating the necessary information for discriminating the materials obtained on recording, such as recording time, recording ID, recording title, or the name of a photographer or a reporter.

In the present programme preparation and distribution system 100, the transmission format used in transmitting video or audio data or the metadata is the SDI (Serial Digital Interface) as a digital transmission format standardized by SMPTE. Fig.3A shows the structure of the entire SDI format data.

The SDI format includes a 4-dot EAV (End of Video) area, indicating the end of synchronization, a 268-dot AND (ancillary) area, a 4-dot SAV (start of video) area, indicating start synchronization, and a 140-dot active video area, and is made up of 525 lines. The numerals entered in parentheses indicate the values defined in accordance with the PAL (phase alternation line) system.

The active video area includes a 9-line vertical blanking portion (VBK_1), a 10-line optional blanking portion (OBK_1), a 244-line active video portion (ACV_1), a 9-line vertical blanking portion (VBK_2), a 10-line optional blanking portion (OBK_2) and a 243-line active video area (ACV_2).

The SDI is a format for transmitting the non-compression digital data, such as D1 or D2 format, in which audio data is stored in an ancillary area and video data such as D1 or D2 is stored in the active video area. In the SDI format, metadata are transmitted by being inserted into the ancillary area.

Fig.3B shows one line of the SDI format. In transmission, data with 10 bits per line is transmitted on parallel/serial conversion and transmission path encoding.

As the transmission format for transmitting video, audio and metadata in the picture processing system, there are an SDTI (Serial Digital Transfer Interface) format for transmitting the data compressed by the MPEG system or the DV system, or the SDTI-CP (Serial Digital Transfer Interface – Content Package) format, which is further limited from SDTI format, may be used in addition to the above-described SDI format.

Fig.4A shows a data structure of the SDTI format. Similarly to the SDI format, the SDTI format has a 4-dot EAV (end of video) area, indicating the end synchronization, a 268-dot ANC (ancillary) area and a 4-dot SAV (Start of Video) area, indicating the start synchronization. However, in the SDI format, the active video area, constituted by 525 lines in the SDI format, is defined to be the payload area. It is noted that numerals in parentheses indicate values defined by the PAL (phase alternation line) system.

In the SDTI format, the payload area has blank data portions (BDT_1, BDT_2) and data portions (DT_1, DT_2). However, the number of lines in each data portion is not

defined.

Fig.4B shows a line of the SDTI format. When data is transmitted by the SDTI format, data of 10 bit width per line is transmitted on parallel/serial conversion and transmission path encoding.

In the SDTI format, 53-word SDTI header data, in which to insert the transmission source address, destination address and the line number CRC etc, is contained in the ancillary area. In the SDTI format, the metadata is inserted into an area of the ancillary area excluding the SDTI header data.

Fig.5 shows a data area of the SDTI-CP format data structure. The packet structure in the SDTI-CP is further limitation of the SDTI format and modifies the payload structure to facilitate insertion of variable data.

The data transmitted by the SDTI-CP format includes not only MPEG (Moving Picture Experts Group) 2 video elementary stream, but a variety of data, such as supplementary data, including audio data or metadata, which may be transmitted collectively with the MPEG2 Video Elementary Stream.

The data inserted into the payload is partitioned by "items", while the variable data is included in each item. Specifically, there are four sorts of items, namely a System Item, a Picture Item, an Audio Item and an Auxiliary Item.

The System Item has areas such as System Item Bitmap, Content Package rate, SMPTE Universal Label, Package Metadata Set, Picture Metadata Set, Audio Metadata Set and Auxiliary Metadata Set.

In the SDTI-CP format, metadata is inserted into Package Metadata Set, Picture Metadata Set, Audio Metadata Set and Auxiliary Metadata Set for transmission.

The metadata is the inherent data added and inputted to discriminate materials such as video and audio data, and is transmitted in accordance with the KLV (Key Length Value) consistent with the SMPTE standard and also in accordance with the UMID (Unique Material Identifier) data format.

The KLV format is the data transmitting format having three areas, namely a 16-byte Universal Label Data Key stating the Universal Label Data, a Value Length indicating the data length of metadata stored in the Value area and a Value in which to store the actual metadata corresponding to the SMPTE Dictionary. Fig.6 shows the KLV format.

The Universal Label Data Key is a data area for applying unique labelling to stored metadata. The Universal Label Data Key is further divided into a UL (Universal Label) Header area, including a 1-byte Object ID, and a 1-byte UL (Universal Label) Size, a UL (Universal Label) Designators area, including a UL (Universal Label) Code, SMPTB Design, Registry Design, Data Design and Reference Version, each being 1-byte, and a 9-byte Data Element Tag area.

The UMID is an identifier uniquely determined for discriminating video data, audio (speech) data and other material data. Fig.7 shows a UMID data structure.

The UMID is made up of a Basic UMID as ID for discriminating material data made up of a sequence of pictures, speech and metadata, referred to below as contents,

and Extended UMID as a signature for discriminating the respective contents in the material data.

The Basic UMID has a 32-byte data area, which is made up of a 12-byte Universal Label area, a 1-byte Length Value area, a 3-byte Instance Number area and a 16-byte material Number area.

The Universal Label area has codes for discriminating digital data stored therein, as standardized in detail in SMPTE-298M. The Length Value area denotes the length of UMID. Since the Basic UMID differs in code length from Extended UMID, the Basic UMID is denoted by 13h and the Extended UMID is denoted by 33h. The Instance Number area indicates whether or not the material data has been processed with overwrite processing or editing processing. The Material Number area has three areas, in which are stored codes for distinguishing material data.

The Time Snap, indicated by 4 bytes, denotes the number of snap clock samples per day. That is, it denotes the time of preparation of the material data in terms of clocks as unit. The 8-byte Rnd (random number) is a random number which prevents duplex numbers from being affixed in case incorrect time is set or in case the network address of an equipment defined by IEEE (The Institute of Electrical and Electronics Engineers) is changed.

On the other hand, the Extended UMID is made up of 8-byte Time/Date Code for discriminating the time and the date of preparation of a material in question, 12-byte Spatial Co-ordinates, defining the correction concerning the time of preparation

of the material (time difference information) or the position information represented by the latitude, longitude or altitude, 4-byte Alphanumeric Code (Country) defining the name of a nation 4 by abbreviated alphabetical letters or symbols, 4-byte Alphanumeric Code (Organization) defining a name of an organization, and 4-byte Alphanumeric Code (User) defining the name of a user who prepared a material.

It is noted that metadata indicating the picture size, generation number etc is not contained in the above-described Basic UMID or Extended UMID. In particular, the Material Number is not indicative of the other information concerning the status or the picture of a material. The metadata indicating the picture size or the generation number is transmitted based on the KLV format.

It is noted that, in a metadata dictionary, which is the dictionary provisions which have taken the universal label standardized in the SMPTE 298M into keys, the metadata having the following data elements are prescribed:

That is, there are prescribed, as names of data elements corresponding to the SMPTE label, class 11D and locators (IDENTIFIERS & LOCATORS), globally unique ID (Globally Unique Identifiers), UMID video (UMID Video), UMID audio (UMID Audio), UMID data (UMID Data), UMID system (UMID System), International Broadcasting Organization ID (International Broadcasting Organization Identifiers), organization division (Organization Identifiers), Programme ID (Programme Identifiers), UPID (UPID), UPN (UPN), media ID (Physical Media Identifier), tape ID (Tape Identifier), EBU ID NO (IBTN), ISO ID (ISO Identifiers),

ISO audio visual NO (ISAN), ISO book NO (ISBN), ISO serial NO (ISSN), ISO musical work code (ISWC), ISO printed music NO (ISMN), ISO commercial ID (ISCI), ISO recording code (ISRC), ISO report NO (ISRN), ISO term synopsis (ISBD), ISO textual work code (ISTC), digital object ID (D01), compound ID (Compound IDs), serial item and contribution ID (SICI), serial item and contribution ID (SICI), book item and component ID (SICI), audio visual item and component ID (AICI), distributot ID (PII), object ID (Object Identifiers) and Internet global unique ID (GUID), as shown with #1 to #33 in Fig.8.

There are also prescribed, as names of data elements corresponding to the SMPTE label (GUID and SMPTE label identifiers), meta data object ID (MobID),details of the object ID (Definition object identifiers), details of the object ID (DefinitionObject identifiers), container version indication (GenerationAUID), CNIR (CNRI Handles), device ID (Device Identifiers), device designation (Device Designation), device preparation (Device Make), device model (Device Model), device serial NO (Device Serial Number), globally unique locators (Globally Unique Locators), unique resource ID (UR locators (and "Identifiers"), unique resource locators (URL), unicord URL string (URLString), continuation URL (PURL), resource name (URN), media locator (Media locators), local ID (Local Identifiers), administrative identifiers (Administrative identifiers), transmitting ID (Transmission Identifiers) archive identifier (Archive Identifier), item ID (Item ID), accounting reference NO (Accounting Reference), Transmission Billing (Traffic), physical media

ID (Physical Media Identifiers), film code (Film codes), reel NO (Reel/Roll number), tape ID (tape number), object ID (Object Identifiers) and locally unique ID (LUID), as shown with #34 to #66 in Fig.9.

There are also prescribed, as data element names corresponding to the SMPTE labels, slot ID (SlotID), object text ID (Object text identifiers), name of group (Mob_name), name of slot (SlotName), object name (DefinitionObject_Name), local locators (Local Locators), local media locator (Local Media locators), local file path (Local File Path), film locator (Film Locators), edge code (Edge Code), frame code (Frame Code), key code (Key Code), Ink No (Ink number), segment start code (EdgeCode_Start), proxy locator (Proxy locators), proxy key text (Key text), proxy key frame (Key Frame), proxy key sound (Key Sound), key data (Key data or programme), free writing (Free-form, human readable locator), free writing name (TextLocator_Name), title (Titles), title kind (Title kind), main title (Main Title), sub-title (Secondary title), series NO (Series number), episode NO (Episode Number), scene number (Scene Number), take NO (Take Number), owner (Unique IPR Identifiers), owner by CISAC (IPI (SUISA/CISAC)), natural person/legal entity (Natural Person/legal entity) and ID by AGICOA (AGICOA/MPAA),as shown with #67 to #99 in Fig.10.

There are also prescribed, as names of data elements associated with the SMPTE label, AGICOLA ID (AGICOLA/MPAA Identifier), class 2 administration (ADMINISTRATION), supplier (Supplier), source organization (Source

Organization), contract NO (Supply contract number), original producer name (Original Producer Name), product (Product), the total number of episodes in a series (Total number of Episodes in a Series), rights (Rights), copyright (Copyright), copyright status (Copyright Status), copyright owner (Copyright Owner), intellectual rights (Intellectual Rights), intellectual rights type (IP type), details of IP rights (IP Rights), legal personalities (Legal personalities), owner (Rights Owner), rights management authority (Rights Management Authority), interested parties (Interested Parties), ancillary information to property rights (IP Rights options), maximum number of usages (Maximum Number of Usages), licence options (Licence options), financial information (Financial information), currency (Currency), payments and costing (Payments and costing), royalty information (Royalty Financial Information), profit information (Income), royalty financial information (Royalty Financial Information), access permission (Permitted Access), access level (Restrictions on Use), security (Security) and degree of technical access (System Access), as shown with #100 to #132 in Fig.11.

There are also prescribed, as names of data elements associated with the SMPTE label, a user name (Username), a user name (User Name), a password (Password), a password (Password), a motion picture film (Film), a scramble key kind (Scramble key kind), a scramble key value (Scramble key value), a publication outlet (Publication Outlet), a broadcast outlet information (Broadcast), broadcaster (Broadcaster), a name (Name), a channel (Channel), a transmission medium

(Transmission Medium), a broadcast region (Broadcast Region), broadcast and repeat statistics (Broadcast and Repeat Statistics), a first broadcast flag (First Broadcast Flag), a repeat number (Repeat Number), a current repeat number (Current repeat number), a previous repeat number (Previous repeat number), a rating (Rating), an audience rating (Audience rating), an audience reach (Audience reach), other ratings (Other ratings), participating parties (Participating parties), representative persons (Persons (Groups and Individuals)), nature of person (Group of individuals) (Nature of Person (Group of individuals)), support and administration (Support and Administration), support and administration staffs (Support/Administration Status)), organizations and public bodies (Organizations or Public Bodies) and kinds of organizations and public bodies (Kind of Organizations or Public Bodies), as shown with #133 to #165 in Fig.12.

There are also prescribed, as names of data elements associated with the SMPTE label, a production (Production), a film labo (Contribution Status), support and administration (Support and Administration), a support and administration staff (Support and Administration Status), job function information (Job Function Information), a job function (Job Function), a role (Role/Identity), contact information (Contact Information), contact kind (Contact kind), contact department (Contact Department), representative (Person or Organization Details), person name (Person name), a family name (Family name), a first given name (First Given name), a second given name (Second Given name), a third given name (Third Given name),a group

name (Group name), a main name (Main name), a supplementary name (Supplementary name), an organization name (Organization name), a main name (Main name), a supplementary organization name (Supplementary organization name), a class 3 interpreter (INTERPRETATIVE), fundamental information (Fundamental), countries (Countries), an ISO 3166 country code (ISO 3166 Country Code System), an ISO 3166 country code (ISO 3166 Country Code System), an ISO language code (ISO language code), an ISO language code (ISO language code), interpretative parameters (Data Interpretations), OS characteristics (Operating system interpretations), a fundamental 4 definitions (Fundamental Dimensions) and length (Length), as shown with #166 to #198 in Fig.13.

There are also prescribed, as names of data elements associated with the SMPTE label, a length system (Length System), a length system (Length System), a length unit (Length Unit), a length unit (Length Unit), a time system (Time System), a time system (Time System), a time unit (Time Unit), a time unit (Time Unit), a mass (Mass), an energy (Energy), human assigned (Descriptive-Human Assigned), categorization (Categorization), content classification (Content Classification), a type (Type), a genre (Genre), target audience (Target Audience), cataloguing (Cataloguing and Indexing), catalogue history (Catalogue History), current status of metadata (Status of Data Set), current status of metadata (Status of Data Set), ID in use (Cataloguing, Indexing or Thesaurus system used), a theme (Theme), a genre (Genre), a sub-code (Subject Code), a keyword (Keywords), a key frame (Key Frame), key

sounds (Key Sounds), key data (Key data), textural description (Textural Description), an abstract (Abstract), a purpose (Purpose) and description (Description), as shown with #199 to #231 in Fig.14.

There are also prescribed, as names of data elements associated with the SMPTE label, a color descriptor (Color descriptor), a format descriptor (Format descriptor), a stratum (Stratum), a stratum kind (Stratum kind), supplementary information (Supplementary Information), assessments (Assessments), awards (Awards), individual (Individual), a programme (Programme), qualitative values (Qualitative Values), asset values (Asset Values), content value (Content Value), cultural quality (Cultural Quality), aesthetic value (Aesthetic Value), historic value (Historic Value), technical value (Technical Value), other values (Other Values), descriptors (Descriptors (Machine Assigned or Computed)), categorization (Categorization), content classification (Content Classification), cataloguing (Cataloguing and Indexing), catalogue history (Catalogue History), current status of metadata (Status of Data Set), cataloguing (Cataloguing and Indexing), a keyword (Keywords), a key frame (Key Frame), key sounds (Key Sounds), key data (Key data), textural description (Textural Description), a stratum (Stratum), a stratum kind (Stratum kind), a class 4 parameter (PARAMETRIC) and video encoding parameters (Video Essence Encoding Characteristics), as shown with #232 to #264 in Fig.15.

There are also prescribed, as names of data elements associated with the SMPTE label, video fundamental characteristics (Video Fundamental Characteristics),

a video source device (Video Source Device), OE conversion system (Fundamental opto-electronic formulation), gamma characteristics (gamma information), gamma equation (Gamma Equation), gamma (Gamma), luminance equation (Luma Equation), colorimetry code (Colorimetry Code), scanning information (Fundamental sequencing and scanning), a component sequence (Signal Form Code), color frame index (Color Field Code), a vertical rate (Vertical Rate), a frame rate (Frame Rate), image dimensions (Image dimensions), number of lines (Image lines), a total number of lines per frame (Total Lines per frame), active lines/frame (Active Lines per frame), leading lines (Leading Lines), trailing lines (Trailing Lines), horizontal and vertical dimensions (Horizontal and Vertical dimensions), an aspect ratio (Display Aspect Ratio), an image aspect ratio (Image Aspect Ratio), a capture aspect ratio (Capture aspect ratio), a stored height (Stored Height), a stored width (StoredWidth), a sampled height (Sampled Height), a sampled width (Sampled Width), a sampled X offset (Sampled X Offset), a sampled Y offset (Sampled Y Offset), a display height (Display Height), a display width (Display Width), and a display X offset (Display X Offset), as shown with #265 to #297 in Fig.16.

There are also prescribed, as names of data elements associated with the SMPTE label, a display Y offset (Display Y Offset), video coding characteristics (Video Coding Characteristics), an analogue video system (Analogue Video System), a luminance sampling rate (Luminance Sample Rate), active samples per line (Active Samples per Line), total samples per line (Total Samples per Line), bits per pixel (Bits

per Pixel), sampling information (Sampling Information), a sampling hierarchy code (Sampling Hierarchy Code), horizontal sampling ratio (Horizontal Subsampling), color siting (ColorSiting), a rounding method code (Rounding Method Code), a filtering code (Filtering Code), a sampling structure (Sampling Structure), sampling structure code (Sampling Structure Code), a frame layout (FrameLayout), line field information (VideoLineMap), alpha transparency (AlphaTransparency), a component width (ComponentWidth), black reference level (BlackReferencelevel), white reference level (WhiteReferencelevel), color dynamic range (ColorRange), a pixel layout (PixelLayout), a color palette (Palette), pallet layout (PalletLayout), number of same data in the horizontal direction of original signals (Is Uniform), number of stored neighboring bytes (Is Contiguous), JPEG table (JPEG Table ID), TIFF parameters (TIFFDescriptor_Summary), MPEG coding characteristics (MPEG coding characteristics), MPEG-2 coding characteristics (MPEG-2 coding characteristics), field frame type code (Field Frame Type Code) and film parameters (Film parameters), as shown with #298 to #330 in Fig.17.

There are also prescribed, as names of data elements associated with the SMPTE label, a film to video parameters (Film to Video parameters), field dominance (Field Dominance), frame phase sequence (Framephase sequence), film pulldown characteristics (Film Pulldown characteristics), a pulldown sequence (pulldown sequence), a pulldown phase (Pull down phase), a pulldown kind (Pulldown kind), a pulldown direction (Pulldown Direction), a pulldown phase (Phase Frame), a film

frame rate (Film Frame Rate), 24.00 fps (Capture Film Frame Rate), 23.976 fps (Transfer Film Frame rate), special frame rate (FilmDescriptor_Framerate), film characteristics (Film characteristics), film aperture characteristics (Film capture aperture), film color process (Film Color Process), edge code format (CodeFormat), header text (Header), video and film test parameters (Video and Film test parameters), video test parameters (Video test parameters), Test parameters (Test parameters), a test result (real number) (Test Result (real)), test result (integer) (Test Result (integer)), storage alignment (Video digital storage alignment), buffer size on frame storage (Image Alignment Factor), client fill start (Client Fill Start), client fill end (Client Fill End), padding bits (Padding Bits) and audio essence encoding characteristics (Audio Essence Encoding Characteristics), as shown with #331 to #363 in Fig.18.

There are also prescribed, as names of data elements associated with the SMPTE label, audio fundamental characteristics (Audio Fundamental Characteristics), audio source device (Audio Source Device), fundamental audio formulation (Fundamental audio formulation), audio channel division (Electro-spatial formulation), audio filtering characteristics (Filtering applied), audio reference level (Audio reference level), number of audio channels in mix (Number of audio channels in mix), number of mono channels (Mono channels), number of stereo channels (Stereo channels), number of tracks (Physical Track number), a film sound source (Film sound source), optical track (Optical track), magnetic track (Magnetic track), analogue audio

coding characteristics (Analogue Audio Coding Characteristics), an analogue system (Analogue system), audio sampling characteristics (Digital Audio Sampling Characteristics), sample rate (Sample rate), clock frequency (Reference clock frequency), bits per sample (Bits per sample), a rounding law (Rounding law), dither (Dither), audio coding characteristics (Digital Audio Coding Characteristics), a coding law (Coding law), number of layers (Layer number), an average bit rate (Average Bit rate), a fixed bitrate (Fixed bitrate), audio test parameters (Audio test parameters), SNR (Signal to noise ratio), weighting (Weighting), audio summary information (Audio summary information), AIFC format summary (AIFCDescriptor_Summary), WAVE format summary (WAVEDescriptor_Summary) and an encoding method (Data Essence Encoding Characteristics), as shown with #364 to #396 in Fig.19.

There are also prescribed, as names of data elements associated with the SMPTE label, fundamental characteristics (Data Essence Fundamental Characteristics), information of original source signals (Analogue Data Essence Coding Characteristics), analogue data coding (Analogue Data Coding), digital coding characteristics (Digital Data Coding Characteristics), original recording data (Data test parameters), metadata encoding characteristics (Metadata Encoding Characteristics), metadata fundamental characteristics (metadata fundamental characteristics), time code characteristics (Timecode Characteristics), time code kind ((Timecode kind), time code kind ((Timecode kind), a drop frame (Drop), LTC/VITC (Source Type), time code time base (Timecode Timebase), frames/sec (FPS), user bit ON/OFF

(Timecode User bit flag), start address (Start), time code sampling rate (TimecodeStream_Sample Rate), time code data itself (Source), time code with sync signal (IncludeSync), analogue metadata information (Analogue Metadata Coding Characteristics), an analogue metadata carrier (Analogue Metadata Carrier), digital metadata information (Digital Metadata Coding Characteristics), digital metadata carrier (Digital Metadata Carrier), metadata test characteristics (Metadata test parameters), system and control Encoding characteristics (System & Control Encoding Characteristics), system and control fundamental characteristics (System & Control Fundamental Characteristics), original analogue signal information (Analogue System & Control Coding Characteristics), analogue system (Analogue System & Control Coding), original digital signal information (Digital System Coding Characteristics), digital metadata information (Digital System Metadata Sampling Characteristics), original signal metadata characteristics (System Metadata test parameters) and general encoding characteristics (general encoding characteristics), as shown with #397 to #429 in Fig.20.

There are also prescribed, as names of data elements associated with the SMPTE label, general essence encoding characteristics (General Essence Encoding Characteristics), a sampling rate (Samplerate), a length (Length), container encoding characteristics (Container encoding characteristics), byte sequence (ByteOrder), storage medium parameters (Storage Medium parameters), a tape cartridge format (Tape cartridge format), video tape gauge (Videotape gauge and format), tape size

(FormFactor), a signal form (VideoSignal), a tape format (TapeFormat), recording length (Length), tape manufacturer (TapeDescriptor_ManufacturerID), a tape model (Model), disc recorder parameters (Disc recorder parameters), disc kind (Disc kind and format), film medium parameters (Film Medium Parameters), film stock manufacturers (Film stock manufacturers), a film stock type (Film Stock type), perforation information (PerforationPerFrame), a film kind (FilmKind), a film format (FilmFormat), a film aspect ratio (FilmAspectRatio), manufacturer (Manufacturer), a model (Model), a film gauge (Film gauge and format), (Object Characteristics (Placeholder)), device characteristics (Device Characteristics), camera characteristics (Camera Characteristics), optical characteristics (Optical Characteristics), focal length (Focal length), a CCD size (Sensor Size), and a lens aperture (Lens Aperture), as shown with #430 to #462 in Fig.21.

There are also prescribed, as names of data elements associated with the SMPTE label, a CCD size of original signals (Sensor Type Code), a field of view (Field of View), special lens (Anamorphic lens characteristics), optical test parameters (Optical Test Parameters), sensor characteristics (Optical sensor characteristics), flare characteristics (Flare), microphone characteristics (microphone Characteristics), a sensor type (Sensor type), polar characteristics (Polar characteristics), image characteristics (Image Characteristics), an image category (Image Category), class 5 creation process (PROCESS), process status flag (Process Indicators), fundamental information (Fundamental), shot, clip, segment indication (Integration Indication), a

quality flag (Quality Flag), physical instance category (Physical Instance Category), capture (Capture), digital or analogue origination (Digital or analogue origination), microphone position (Microphone Placement techniques), dubbing information (Manipulation), number of times of change (Simple Flagging), copy numbers (Copy Number), a clone number (Clone Number), work in progress flag (Work in Progress Flag), analogue digital mixing (Digital or analogue mix), payload compression hysteresis (Downstream Processing History), a video compression history (Video Compression History), a video compression algorithm (Video Compression Algorithm), compression hysteresis data set (MPEG2 dynamic coding historical dataset), a noise reduction algorithm (Video Noise Reduction Algorithm), and compression (Compression), as shown with #463 to #495 in Fig.22.

There are also prescribed, as names of data elements associated with the SMPTE label, audio compression history (Audio Compression History), audio compression algorithm (Audio Compression Algorithm), audio compression history data (MPEG-2 Audio Dynamic coding history), a noise reduction algorithm (Audio Noise Reduction Algorithm), a data compression history (Data Compression History), metadata compression history (Metadata Compression History), MPEG process (MPEG processing), splicing metadata (Splicing Metadata), correction of the essence (Enhancement of Modification), correction of video signals (Video processing), description of correction (Enhancement of Modification Description), device designation (Video processor settings (Device-specific)), device kind (Device kind),

device parameters (Device parameters), device parameter setting (Device parameter setting), audio processing (Audio processing), description of correction (Enhancement of Modification Description), audio processor settings (Device-specific), a device kind (Device kind), device parameters (Device parameters), device parameter setting (Device parameter setting), correction of data (Data processing), description of correction (Enhancement of Modification Description), data processor settings (Data processor settings (Device-specific)), a device kind (Device kind), device parameters (Device parameters), device parameter setting (Device parameter setting), editing information (Editing Information), editing version information (Editing version information), file format version (Version), editing details (Editing decisions), a file format version (Version), editing details (Editing decisions), contents of change (RelativeScope) and change slot (RelativeSlot), as shown with #495 to #528 in Fig.23.

There are also prescribed, as names of data elements associated with the SMPTE label, an original signal group (SourceMobSlotID), fade information default (DefFadeType), editing matte information (Editing matte information), editing event information (Editing event information), comment (Event_Comment), event ON/OFF information (ActiveState), edit effect information (Edit effect information), audio fade-in type (FadeInType), audio fade-out type (FadeOutType), control point (ControlPoint_Value), a constant value (ConstantValue_Value), hint 'Edithint), transient information (IsTimeWarp), category information (Category), input segment number (NumberInputs), bypass information (Bypass), editing web information

(Editing web information), start (BeginAnchor), end (Endanchor), editing user notes (Editing user notes), tag information (TaggedValue_Name), value information (TaggedValue_Value), class 6 inter-data information (RELATIONAL), relation (Relationship), relation kind (Relatives), correlative values (Essence to Essence), a source material (source material), UMID (Source material UMID), a source material (source material), most recent edit text (Most Recent Edit text), and most recent edit UMID (Most recent edit UMID), as shown with #529 to #561 in Fig.24.

There are also prescribed, as names of data elements associated with the SMPTE label, metadata to essence (Metadata to Essence), metadata to metadata (Metadata to Metadata), object to object (Object to Object), metadata to object (Metadata to Object), relation to production materials (Related production material), programme support material (Programme support material), relation to advertising material (Programme advertising material), relation to CM (programme commercial material), numerical sequence (Numerical sequence), numerical sequence in sequence (Numerical sequence in sequence), offset information (Relative position in sequence (value)), preview, next information (Relative position in sequence (value)), preview, next information (Relative position in sequence (descriptive)), structural relationship (Relationship structures), relationship in contents (Containing relations), contents themselves (Contains one), a still frame (Still Frame), a hot spot matte (Hot Spot Matte), annotation (Annotation), translation (Rendering), pull-in (InputSegment), Selection (Selected), effect on transition (Operation Group), web addresses

(Manufacturing Info), content group (Content), content description (Dictionary), essence description (Essence Description), segment description (Segment), contains set (contains set), parameters (Parameters), alternate segments (Alternates), group (Mobs), and essence data (Essence Data), as shown with #562 to #594 in Fig.25.

There are also prescribed, as names of data elements associated with the SMPTE label, properties (Properties), locators (Locators), class definition (class definitions), type definition (type definitions), operating definitions (Operation Definitions), parameter definitions (Parameter Definitions), data definitions (Data Definitions), plugin descriptors (Plugin Descriptors), codec descriptions (codec descriptions), container description (Container Definitions), interpreter description (Interpolator Definitions), comments (Comments), contains order set (Contains order set), different format specifications (Choices), input segments (Input Segments), nesting information (NestedScope_Slots), components (Components), locators (Locators), ID lists (Identification List), group slot (Mob_Slots), point values (PointList), contains stream of data (Contains stream of data), data (Data), ID (Sample Index), weak reference relation (Weak reference relation), weak reference to one object (Weak reference to one object), generation (Generation), data definition (Data Definition), operational definition (Operational Definition), source ID (SourceID), kind of effect (Control Point_Type), post-editing ID (Operation Definition_DataDefinition) and control type (Parameter Definition_Type), as shown with #595 to #627 in Fig.26. There are also prescribed, as names of data

elements associated with the SMPTE label, property (Property Definition_Type), category (Category Class), file descriptors (FileDescriptor Class), group name (MobID), container format (Container Format), description on parameters (Definition), parameter types (Parameter_type), interpretation (Interpolation), data type (TaggedValue_Type), strong relevance of objects (Type Definition Strong Object Reference_Referenced Class), weak relevance of objects (Type Definition Weak Object Reference_Referenced Class), underline element type (Type Definition PixedArray_Element Type), variable array element type (Type Definition PixdArray_Element Type), fixed array element type (Type Definition VariableArray_Element Type), description on element type (Type Definition String_Element Type), a string element (Type Definition String_Element Type), a stream element (Type Definition Stream_Element Type), weak reference set (Set of weak references), plugin descriptors (Plugin Descriptors), parameters (ParametersDefined, data definitions (Data Definitions), an ordered set of weak references (Ordered set of weak references), degradation of properties (Degrade To), member types (Member Types), class relations (Class Relations), parent class (Parent class), parent class (Parent class), child class (Child class), instances of class (Instance of class), an object class (Object Class), and metadata object definitions (Metadata object definitions), as shown with #628 to #660 in Fig.27.

There are also prescribed, as names of data elements associated with the SMPTE label, property (Property definition), hint (Is Searchable), essential/optional

(Is Optional), default conditions (Default Value), local ID (local Identification), type definition (Type definition), size (Size), specified size (Is Signed), element name (TypeDefinitionEnumeration_Element Names), element name (Type Definition Enumeration_Element Values), number of arrays (Element Count), member names (Member Names), name of extension (Type Definition Extendible Enumeration_Element Names), name of extension (Type Definition Extendible Enumeration_Element Vales), instance description (Instance descriptions), description (Description), container definitions (Container definitions), essence labels (Essence Is Identified), code objects (Related Code Objects), plugin code objects (Relations to plugin code objects), name (Name), plug-n (Plugin Descriptor_Identification), description (Description), version number (Version Number), a version string (Version String), manufacturers (Manufacturer), manufacturer ID (Manufacturer ID), platforms (Platform), platform versions (Min Platform Version), platform OS versions (Max Platform Version), plugin engines (Engine), mini engine version(MinEngine Version) and max engine version(MaxEngine Version), as shown with #661 to #693 in Fig.28.

There are also prescribed, as names of data elements associated with the SMPTE label, API plugin (Plugin API), mini plugin of API (Mini Plugin API), max plugin API (Max Plugin API), software (Software Only), accelerator (Accelerator), authentication (Authentication), relation to application codes (Relation to application code objects), company name (Company Name), product name (Product Name), product number (Product ID), a product version (Product Version), product version

string (Product Version String), a toolkit version (Toolkit Version), a platform (Platform), class 7 space time (SPATIO-TEMPORAL), position and space vectors (Position and Space Vectors), an image coordinate system (Image Coordinate System), map datum used (Map Datum Used), an absolute position (Absolute Position), local datum absolute position (Local Datum Absolute Position), local datum absolute position accuracy (Local Datum Absolute Position Accuracy (m)), a device code (device altitude (m)), a device code (device altitude (meters, concise)), device latitude (Device Latitude (degrees)), device latitude (Device Latitude (degrees, concise)), device longitude (Device Longitude (degrees)), device longitude (Device Longitude (degrees, concise)), device size (X) (device X Dimension(m)), device size (Y) (device Y Dimension(m)), a subject absolute position (Subject Absolute Position) and frame position accuracy (Frame Position Accuracy (m)), as shown with #694 to #726 in Fig.29.

There are also prescribed, as names of data elements associated with the SMPTE label, a frame centrelatitude (Frame Centre Latitude (degrees), a frame centre latitude (Frame Centre Latitude (degrees, concise), a frame centre longitude (Frame Centre Longitude (degrees), a frame centre longitude (Frame Centre Longitude (degrees, concise), a frame centre longitude (Frame Centre Longitude (degrees), a frame centre latitude longitude (Frame Centre Lat-Long), a relative position (Relative Position), a local datum relative position (Local Datum Relative Position), local datum relative position accuracy (Local Datum Relative Position Accuracy), a device relative

position (Device Relative Position), device relative position accuracy (Device Relative Position Accuracy), a device relative position (X) (Device Relative Position X (meters)), a device relative position (Y) (Device Relative Position Y (meters)), a device relative position (Z) (Device Relative Position Z (meters)), a device relative position (Device Relative Position), subject relative positional accuracy (Subject Relative Positional Accuracy (meters)), image position information (Image Position Information), a position within viewed image x coordinate (pixels) (position within viewed image x coordinate (pixels)), a position within viewed image y coordinate (pixels) (position within viewed image y source image centre (x pixel), source image centre (x pixel) (Source image centre x coordinate (pixels)), source image centre (y pixel) (Source image centre y coordinate (pixels)), a view port image centre (x pixel) (Viewport image e centre x coordinate (pixels)), a view port image centre (y pixel) (Viewport image centre y coordinate (pixel (y pixel)s)), rate and direction of positional change (Rate and Direction of Positional Change), device rate and direction of positional changes (Device Rate and Direction of Positional Changes), an absolute device rate and direction of positional changes (Absolute Device Rate and Direction of Positional Changes), device movement speed (Device Absolute Speed (meters/sec)), device heading (Device Absolute Heading (degrees)), relative device rate and direction of positional change (Relative Device Rate and Direction of Positional Change), device relative speed (Device Relative Speed (metres/sec)), device relative setting (Device Relative Setting (degrees)), subject rate and direction of positional change

(Subject Rate and Direction of Positional Change), absolute subject rate and direction of positional change (absolute subject rate and direction of positional change) and subject absolute speed (metres/sec)), as shown with #727 to #759 in Fig.30.

There are also prescribed, as names of data elements associated with the SMPTE label, subject absolute heading (subject absolute heading (degrees)), subject absolute heading (Subject Absolute Heading (degrees)), relative subject rate and direction of positional change (Relative Subject Rate and Direction of Positional Change), subject relative speed (Subject Relative Speed (metres/sec)), subject relative heading (subject relative heading (degrees)), angular specifications (angular specifications), device angles (Device angles), sensor roll angle (degrees) (Sensor Roll Angle (degrees)),an angle to north (Angle to North (degrees)), an obliquity angle (Obliquity Angle (degrees)), subject angles (Subject Angles(degrees)), distance measurements (Distance Measurements), a device to subject distance (Device to Subject Distance), a slant range (slant range (metres)), distance (Dimensions), subject dimensions (Subject Dimensions), a target width (Target Width), essence positions (Studio and Location Dimensions), media dimensions (Media Dimensions),a physical media length (Physical Media Length (metres)), image size (Image Dimensions), pan and scan image dimensions (Pan and Scan Image Dimensions), a viewport height (Viewport height), a viewport width (Viewport width), abstract locations (Abstract Locations), place names (Place Names), gazetteer used (Gazetteer used), specified names (Place keyword), country codes (Country Codes), object country code (Object

Country Code), country code of shoot (Country Code of Shoot), country code of setting (Country Code of Setting (Characterised Place)), country code of copyright license (Country Code of Copyright License) and country code of IP license (Country Code of IP License), as shown with #760 to #792 in Fig.31.

There are also prescribed, as names of data elements associated with the SMPTE label, regions in a country (Regions), regions of object (Region of Object), regions of shoot (Regions of Shoot), regions of setting (region of setting (Characterised Place)), region or area of Copyright License (Region or Area of Copyright License), region or area of IP License (Region or Area of IP License), a postal address (Postal Address), room numbers (Room Number), street number or building name (Street Number or Building Name), streets (Street), , a postal town (Postal Town), city (City), state or province or county (State or Province or County), postal code (Postal Code), country (Country), setting addresses (Setting Address (Characterised Place)), setting room numbers (setting room number), setting street number or building name (Setting Street Number or Building name), setting streets (Setting Street), setting towns (Setting Town), setting city (Setting City), setting state of province or county, (Setting State of Province or County), a Setting postal code (Setting Postal Code), setting country (Setting Country), setting description (Setting Description), electronic addresses (Electronic Address), telephone number (Telephone Number), fax number (FAX Number), e-mail address (e-mail address), date and time information (Date and Time) and material date and time (Material Date and Time), as

shown with #793 to #825 in Fig.32.

There are also prescribed, as names of data elements associated with the SMPTE label, operational date and time (Operational Date-Time Stamps), creation date and time (Creation Date-Time Stamps), creation date and time (Creation Date-Time Stamps), last modified data and time (Last Modified Date-Time Stamps), user defined date and time (User Defined Date-Time Stamps), user defined date and time (User Defined Date-Time Stamps), absolute date and time (Absolute Date and Time), start date and time (Start Date and Time), end date and time (End Date and Time), segment start date and time (Segment Start Date and Time), segment end date and time (Segment End Date and Time), relative date and time (Relative Date and Time), media start date and time (Start Date and Time), media end date and time (End Date and Time), segment start date and time (Segment Start Date and Time), segment end date and time (Segment End Date and Time), time interval (Material Durations), absolute time interval (Absolute Durations), time duration of contents (Time Duration), segment time duration (Segment Duration), frame counts (Frame Count), segment frame counts (Segment frame count), textless black duration (Textless Black Duration), relative durations (Relative Durations), time duration (Time Duration), segment duration (Segment Duration), film frame interval (Frame Count), segment frame count (Segment frame count), rights date and time (Rights Date and Time), copyrights date and time (Copyright Date and Time), IP rights date and time (IP rights date and times) and license date and time (License date and times), as shown with

#826 to #858 in Fig.33.

There are also prescribed, as names of data elements associated with the SMPTE label, option start date and time (Option start date and time), license end date and time (License end date and time), option end date and time (Option end date and time), rights durations (Rights Durations), copyrights durations (Copyrights Durations), IP rights durations (IP Rights Durations), license durations (License durations), optional durations (Option duration), cataloguing date and time (Cataloguing date and time), creation date and time (Creation date and time), last modified date and time (Last Modified), event date and time (Event Date and Time), absolute date and time of event (Absolute Date and Time), start date and time of event (Start Date and Time), project start date and time (Project Mission Start Date and Time), scene start date and time (Scene Start Date and Time), shot start date and time (Shot Start Date and Time), broadcast start date and time (Broadcast Start Date and Time), absolute end times (Absolute end times), project mission end date and time (Project Mission End Date and Time), scene end date and time (Scene End Date and Time), shot end date and time (Shot End Date and Time), broadcast end date and time (Broadcast End Date and Time), relative date and time (Relative Date and Time), event relative start date and time (Relative Start Times), project relative start date and time (Project Mission Start Date and Time), scene relative start date and time (Scene Start Date and Time), shot relative start date and time (Shot Start Date and Time), broadcast relative start date and time (Broadcast Start Date and Time),

relative end time (Relative End Times), project relative end date and time (Project Mission End Date and Time), scene relative end date and time (Scene End Date and Time) and shot relative end date and time (Shot End Date and Time), as shown with #859 to #891 in Fig.34.

There are also prescribed, as names of data elements associated with the SMPTE label, relative broadcast end date and time (Broadcast End Time), event duration information (Event Durations), absolute duration information (Absolute Durations), absolute event time duration (Time Duration), relative durations (Relative Durations), relative event time durations (Time Duration), editing date and time (Editing Date and Time), editing length (Length), editing position (Position), relative start time (StartTime), speech fade-in length (FadeInLingth), speech fade-out length (Fade Out Length), cut point standard (Cut Point), time standard (Time), last edit date and time (last Modified), ID of last modified results) (LastModified), last creation date and time (Last Modified), ID of last modified results (Last Modified), date and time of last creation (Creation Time), speech soft cut default standard (Default Fade Edit Unit), event time unit standard (Event Mob Slot_Edit Rate), slot time unit standard (Timeline Mob Slot_EditRate), date of final correction (Identification_Date), slot origin (Origin), process date and time (Process Date and time), technical modification date and time (Technical Modification date and time), simple correction date and time (Editorial Modification date and time), broadcast date and time (Broadcast Date and Time), cassation date and time (Cassation Date and Time), setting date and time

(Characterised Time Period), term of validity of keywords (Time Period Keyword Thesaurus), time unit of keyword (Time Period of Keyword), delay time (Delay) and the encoding/decoding information (Encoding/Decoding Information), as shown with #892 to #924 in Fig.35.

There are also prescribed, as names of data elements associated with the SMPTE label, encoding delay (Encoding Delay), decoding delay (Decoding Delay), buffer delay (Buffer Delay), latency information (Latency), temporal information (Temporal Shape (Shuttering etc) (PLACEHOLDER)), shutter characteristics (Shutter characteristics (placeholder)), shutter speed (Shutter speed (placeholder)), shutter gating characteristics (Shutter Gating (placeholder)), class 14 user data (USER ORGANIZATION REGISTERED), publicly registered user organization metadata (publicly registered user organization metadata), private metadata (Privately registered user organization metadata), metadata for US Department of Defence Agency (DoD Metadata), UAV metadata (UAV metadata), RQ1A metadata (RQ1A metadata), RQ1A closed caption metadata (RQ1A closed caption Set) and class 15 experimental metadata (experimental metadata), as shown with #925 to #940 in Fig.36.

In this programme preparation and distribution system, essence data and metadata are converted into the MXF file format when transmitted on the gigabit Ethernet 1. For example, there are occasions wherein the video essence recorded on a recording medium becomes a sole MXF file or a sole MXF file is prepared from a sole video programme, wherein the unit of the essence can be freely set depending on

the application.

A metadata MXF file 200 is made up of a preamble portion 201 for stating metadata, a main portion (body portion) 202 for stating the essence data, an index portion 203 containing an index table and a postamble unit 204, as shown in Fig.37.

The preamble portion 201 is made up of a universal label 205, an allocation table 206 and an overall metadata area 207. The universal label 205 of this metadata MXF file 200 has the same syntax structure as the universal label of the KLV coding. The allocation table 206 is a table on which is registered the allocation information of each objet in the overall metadata area 207.

The overall metadata area 207 is an area in which is stated metadata registered in a metadata dictionary which is the dictionary provision in which the universal label standardized in the SMPTE 298M is taken into keys. A Header_Object 210 is a root object for indicating each object of this overall metadata area 207. Specifically, there are provided in the node of this Header_Object 210 Identification_Object 211, Master_Metadata_Object 212, Source_Metadata_Objet 213 and Essence_Data_Object 214. Since the master essence is made up of plural sorts of source essences, metadata concerning the master essence and metadata concerning the source essence are expressed by another object in this overall metadata area 207.

The Master_Metadata_Object 212 is an object containing metadata for explaining the properties of each essence contained in this metadata MXF file 200 and pointers for pointing to a Master_Timeline_Track_Objects 215. The

Master_Timeline_Track_Objects 215 is an object which defines and explains tracks contained in this metadata MXF file 200 and which points to a Master_Clip_Object 216. A track herein means a unit set from one essence sort, such as video or audio, to another, whilst clip means an editing clip provided for respective in- and out-points in essence editing and has a unit different from that of a scene. The Master_Clip_Object 216 is an object containing metadata indicating which source material is being used, and also containing a pointer indicating the Source_Metadata_Objet 213.

The Source_Metadata_Objet 213 is an object provided for each source essence constituting a master essence and is an object containing metadata concerning the source essence and a pointer indicating a Source_Timeline_Track_Object 217. The Source_Timeline_Track_Object 217 is an object set from one track of each source essence to another and includes metadata concerning each track and a pointer for indicating a Source_Clip_Object 218. The Source_Clip_Object 218 is an object set from one clip contained in each track constituting each source essence, and includes metadata concerning the clip and a pointer for indicating an Essence_Clip 219. Therefore, the Essence_Clip 219 is an object containing data of clips constituting the essence.

In this programme preparation and distribution system 100, programme preparation and distribution processing is carried out in accordance with a work flow shown in Figs.38 and 39.

That is, in the work flow of this programme preparation and distribution system

100, the pre-production processing executed by the distributed programme editing system 10 is shown as a programme planning processing PLN in which an acquisition processing ACQ is carried out by the acquisition system 60 and the material storage (ingestion) processing ING, editing processing ED, CG generating processing (CG creation) processing CGC and audio creation processing AUC are carried out to prepare a distribution programme. On the distribution programme, so prepared, the program distribution processing DST and the programme archiving processing are executed by the programme distribution system 50 and by the archive system 40, respectively,

In this programme preparation and distribution system 100, metadata indicating the variable information is generated from project to project, from medium to medium, from scene to scene or from frame to frame, to realize an asset management by controlling the archive system 40 depending on metadata.

Among the metadata generated from project to project, there are metadata indicating variable information, such as main title (Main Title), secondary title (Secondary Title (Sub-Title)), series (Series Number), episodes (Episode), original (Original Bock/Title), author (Original Author/Writer), director (Director), right (Right) or copyright (Copyright).

Among metadata generated from medium to medium, there are metadata indicating variable information, such as real (roll) number (Real Number (Roll Number)), or frame rate (Frame rate).

Among metadata generated from scene to scene, there are metadata indicating the variable information, such as performers (Cast Actor/Actress), elements (Elements), screen play (Screen Play), scene description (Scene Description), sets (Set), properties (Properties), unit/crew/staff (Unit/Crew/Staff), camera setup data (Camera Setup Data), writing information (Writing Info), video format (Video Format), audio format (Audio Format), audio channel assignment (Audio Channel Assignment), motion capture data (motion capture data), comment (Comment), telecine data (Telecine Data), composers of sound track (SoundTrack(Music)), song writers (Song Writer), an arranger (Arranger), compositing information (Compositing Info), visual effect (Visual Effects), sound effects (Sound. Effects), V-Chip information (V-chip information) or generation (Generation (Number of copies)).

Among metadata generated from frame to frame, there are metadata indicating variable information, such as scene number (Scene Number), shot number (Shot Number), take number (Take Number), OK shot/NG shot (OK shot/NG shot), UMID (video) (UMID for video essence), UMID (audio) (UMID for audio essence), UMID (others) (UMID for Others), places (Places), GPS latitude (GPS Latitude), GPS longitude (GPS Longitude), GPS altitude (GPS Altitude), camera ID (Camera ID), camera lens (Camera Lens Data), lens ID (Lens ID), focus (Focus), zoom (Zoom), iris (Iris), tripod angle information (Tripod), tripod ID (Head ID), pan (Pan), tilt (Tilt), roll (Roll), dolly position information (Dolly), arm height (Arm Height), position (Travel) and closed caption (Closed Caption).

In the pre-production step executed by the distributed programme editing system 10, planning processing PP1, casting (Casting) processing PP2, storyboard processing PP3, screen play processing PP4, location hunting processing PP5 and scheduling processing PP6, are carried out.

In the planning processing PP1 for inspecting the programme contents, there are generated metadata such as main title (Main Title), secondary title (Secondary Title (Sub-Title)), series (Series Number), episodes (Episode), original (Original Bock/Title), author (Original Author/Writer), director (Director), element (Element), comment (Comment), composer (Composer) of sound track (soundtrack(Music)), song writers (Song Writer), arrangers (Arranger), rights (Right), copyright (Copyright) or V-Chip information (V-Chip info). In the stage of the casting processing PP2, metadata indication the information determining the performers, metadata indicating the variable information such as performers (Cast Actor/Actress) or unit/crew/staff (Unit/Crew/Staff) is generated. In the stage of the storyboard processing PP3 for inspecting the programme contents, there are generated metadata such as scene number (Scene Number), shot number (Shot Number), set (Set), properties (Properties), video format (Video Format), frame rate (Frame rate), audio format (Audio format) or audio channel assignment (Audio Channel Assignment). In the stage of screen play processing PP4 of ascertaining the screen play, there are generated metadata such as screen play (Screen Play), scene description (Scene Description), place (Place) and closed caption.

The metadata indicating variable information such as main title (Main Title), secondary title (Secondary Title (Sub-Title)), series (Series Number), episodes (Episode), original (Original Bock/Title), author (Original Author/Writer) or director (Director), are generated after the project and are utilized for the casting (Casting) processing PP2, storyboard processing PP3, screen play processing PP4, location hunting processing PP5 and scheduling processing PP6, while being utilized for the acquisition processing ACQ by the acquisition system 60, authoring processing (Authoring) by the production system 20, programme distribution processing DST by the programme distribution system 50 or the programme archiving processing ARV by the archive system 40.

The variable metadata, generated by the distributed programme editing system 10 in the pre-production stage, are transmitted over the gigabit Ethernet 1 to the archive system 40 for storage in a petasite 40B of the archive system 40. The production system 20, new system 30, archive system 40, programme distribution system 50 and the acquisition system 60 are able to capture the variable metadata stored in the petasite 40B of the archive system 40 over the gigabit Ethernet 1 as necessary.

Meanwhile, there are occasions wherein the variable metadata, generated in the pre-production stage, are modified and rewritten in the variable processing stages which will be explained subsequently.

The acquisition system 60 takes the metadata required for acquisition

equipments, that is shot devices, to execute the acquisition processing ACQ.

In the acquisition processing ACQ, executed by the acquisition system 60, metadata indicating the real (roll) number (Real Number (Roll Number)), scene number (Scene Number), take number (Take Number), OK shot/NG shot (OK shot/NG shot), UMID (video) (UMID for video essence), UMID (audio) (UMID for audio essence), UMID (data) (UMID for data essence), UMID (others); (UMID for Others), camera setup data (Camera Setup Data), camera ID (Camera ID), camera lens (Camera Lens Data), lens ID (Lens ID), focus (Focus), zoom (Zoom), iris (Iris), tripod angle information (Tripod), tripod ID (Head ID), pan (Pan), tilt (Tilt), roll (Roll), dolly position information (Dolly), arm height (Arm Height) or position (Travel), are generated.

The variable metadata, generated in the acquisition processing stage by the acquisition system 60, is supplied along with the image and speech information, obtained on acquisition, to the production system 20.

The production system 20 executes an ingesting (Ingesting) processing PR1, telecine (Telecine) processing PR2, dupe (Dupe) processing PR3, off-line editing (Off-line Editing) processing PR4, complete edit (Complete Edit) processing PR5, voice over (Voice Over) processing PR6, sound effect (Sound Effect) processing PR7, sound sweetening (Sound Sweetening) processing PR8, CG creation (CG Creation) processing PR9 and finishing (Finishing) processing PR10.

The ingesting (Ingesting) processing PR1 in the production system 20 stores the

variable metadata generated on acquisition by the acquisition system 60 along with the video or audio information. The telecine processing PR2 converts the video or audio information recorded on the film obtained by the acquisition system 60 into television signals. The off-line editing processing PR4 performs material editing operations on the video and audio data (material data), based on the information concerning the material added as metadata, to prepare an editing decision list (EDL) which is the metadata derived from the editing results. The editing results indicate the in- and out-points on the recording medium and the information concerning the edit points represented by the real number 1 or the time code. The present complete edit (Complete Edit) processing PR5 executes complete editing on the material stored by the telecine processing PR2 using the EDL prepared by the off-line editing processing PR4. The finishing (Finishing) processing PR9 completes the distributed programme using the video and audio data completely edited by the complete editing processing PR5 and an audio material processed with voice over (Voice Over) processing PR5. There are occasions wherein the CG picture prepared by the CG creation (CG Creation) processing CGC or the material stored in the archive system 40 is used at this time.

The programme distribution system 50 executes the authoring processing of distributing the distribution programme completed by the finishing (Finishing) processing PR9 as a package medium or the distribution processing of distributing the programme over a radio network or a wired network.

The programme preparation and distribution system 100 of the above-described structure inputs, in the pre-production stage executed by the distributed program editing system 10 and in the casting processing PP2 such metadata as main title (Main Title), secondary title (Secondary Title (Sub-Title)), series (Series Number), episodes (Episode), original (Original Bock/Title), author (Original Author/Writer), director (Director), composer (Composer) of sound track (SoundTrack(Music)), song writers (Song Writer) or arrangers (Arranger), to a computer or a portable telephone device, and sends to the production system 20 the input metadata co-packed with the video or audio information obtained on acquisition by the acquisition system 60, to perform timing designation of flowing the staff roll in the off-line editing processing PR4 in the production system 20 to automatically generate characters consistent with the metadata co-packed with the audio or video information to effect complete edit processing PR5.

In this programme preparation and distribution system 100, a database is constructed in which the archive system 40 manages metadata in a concentrated fashion along with the essence such as video and audio data. By the distributed programme editing system 10, the metadata inputted at the planning processing PP1 and at the casting processing PP2 is registered in the database managed in a concentrated fashion by an archival manager 40A of the archive system 40, at the same time as a tag specifying the registered metadata is issued. This tag is co-packed with the video and audio information obtained on acquisition by the acquisition system 60.

In the production system 20, the timing to flow the staff roll is specified during the off-line processing PR4 in the production system 20. In accordance with the specified timing, the metadata is taken out from the database pointed by the tag co-packed with the video information or the audio information to generate the corresponding character automatically to effect complete editing processing.

That is, with the present programme preparation and distribution system 100, it is possible to construct a supporting system of automatically generating the character of the staff roll using the metadata.

In this programme preparation and distribution system 100, the GPS data indicating the place, position or time of acquisition is inputted as metadata in the stage of the acquisition processing ACQ by the acquisition system 60 and the input metadata is co-packed with the audio or video information obtained on acquisition by this acquisition system 60. At the off-line editing processing PR4 in the production system 20, an editor is able to execute temporal programme distribution without the editor becoming conscious of the presence of the GPS data. At the CG creation processing PR9, retrieval is made from the database showing a separately provided database, using tag data indicating the position or time co-packed in the video or audio information to output map graphics to complete the programme employing the map graphic by the complete editing processing PR5.

In this case, as when automatically generating the character, the metadata indicating the position or time can be registered in the database managed in a

concentrated fashion by the archival manager 40A of the archive system 40 to support the CG creation processing PR9.

That is, in this programme preparation and distribution system 100, the GPS data and map data can be matched to each other, using metadata, to construct the CG creation supporting system.

If it is attempted to prepare contents using the VTR, a large amount of a material video tape is produced in acquisition. For example, if a 30-minute document is to be created, 50 to 100 material tapes are produced and necessary cuts are selected therefrom and connected together to prepare contents.

Thus, in this programme preparation and distribution system 100, metadata of such items as UMID (video) (UMID for video essence), reminiscent of contents acquired in the material tape (UMID for video essence), UMID (audio) (UMID for audio essence), UMID (data) (UMID for data essence), UMID (others) (UMID for others), reel (roll) number (Real Number (Roll Number), tape ID (Tape ID), tape number (Tape IDNumber), object ID (object ID), main title (Main Title), secondary title (Secondary Title (Sub-Title)), series (Series Number), episodes (Episode), metadata to essence (Metadata to Essence), locators (Locators) or essence descriptions (Essence Descriptions), are co-packed and recorded along with the video or audio information. This enables the production system 20 to read out the metadata at the time of reproduction to retrieve the cuts as necessary from the material tape quickly, using the read-out metadata as clue. In this case, metadata of items reminiscent of the

contents recorded in the material tape is co-packed with the video or audio information and recorded in synchronism in a video frame or the contents of tens to hundreds of video tapes are collected and recorded on a controllable external recording medium.

That is, in this programme preparation and distribution system 100, a supporting system can be constructed in which the labor in tape screening operations can be diminished with the aid of metadata.

Moreover, in this programme preparation and distribution system 100, metadata of items concerning the telecine, such as vertical rate (Vertical rate), a frame rate (Frame Rate), total number of lines/frame (Total lines per Frame), active lines/frame (Active Lines per Frame), aspect ratio (Display Aspect Ratio), image aspect ratio (ImageAspectRatio), stored height (Stored Height), sample height (Sample Height), sample width (Sample Width), sample X offset (SampledX Offset), sample Y offset (SampledY Offset), display width (Display Width), displayX Offset (DisplayX Offset) or video coding characteristics (Video Coding Characteristics) are co-packed and recorded along with the video or audio information. In this manner, in the complete edit processing PR5, output trimming positions can be calculated using metadata recorded in keeping with the output format after the editing operation following the output format to obtain an output.

Also, in this programme preparation and distribution system 100, the essence data and metadata when transmitted on the gigabit Ethernet 1 are converted to the MXF file format, such that, in the editing operation by the production system 20, the

status of the material used in the editing operation is stated as hysteresis in the header information. The contents makeup can be comprehended from the header information. The Clip_object, for example, terms the scene or cut a clip and indicates the time code indicating the temporal beginning or end, as described above. The contents are a set of clips. By sequentially searching the information indicated by the clip in the chronological sequence, it is possible to know the time code as a chapter candidate. Since the number of ultimate chapters is smaller than the number of change points of clips, the entire chapters can be determined by selecting only necessary ones of candidate chapters.

Thus, in this programme preparation and distribution system 100, in distributing the contents prepared by the production system 20 by mediums, such as DVD or LD, the MFX file headers are searched for packages, the editing operations of which has been completed by the production system 20, the MFX file headers are searched to list up candidates of chapter points and the chapter points ahead and in back of the candidates are viewed to select only necessary chapter points to convert the format for distributing the contents to the mediums, such as DVD or LD, by way of authoring processing. That is, in this authoring system 52, authoring processing of the editing video programme is performed from the metadata specifying the logical structure of the video programme.

In addition, in this programme preparation and distribution system 100, in which the information such as rights concerning performers from scene to scene

(Rights), copyright (Copyright), intellectual rights (Intellectual Rights), owners (Rights Owner), payments and costing information (Payments and costing), is logged and recorded simultaneously as metadata, it is possible to trace clips if such clips are sliced.

According to the present invention, in which the essence is created, metadata for describing the essence is generated when creating the essence, the essence and the metadata are correlated with each other, and the operation to be performed on the archived essence is controlled based on the metadata to perform the asset management on the essence, it is possible to process a sequence of operations from the acquisition and preparation to the editing, sending out and archiving efficiently.

Moreover, according to the present invention, in which the essence is created, metadata for explaining the essence is generated, the essence and the metadata are archived in relation with each other, and the metadata is used to control the operation performed on the archived essence, asset management may be performed on the essence.

Also, according to the present invention, in which metadata for explaining the essence is generated and the essence and the metadata are controlled based on the above-mentioned information to effect the asset management on the essence, it is possible to realize efficient processing of a sequence of operations from acquisition and creation to the editing, sending out and archiving.

In addition, according to the present invention, in which the information

specifying the attributes of the essence, the essence and the information are recorded correlatively with each other on a recording medium and the recording and/or reproducing operations for reproducing the essence from the recording medium is controlled based on the above-mentioned information, to perform the asset management on the essence, it is possible to realize efficient processing of a sequence of operations from acquisition and creation to the editing, sending out and archiving.

Furthermore, according to the present invention, in which metadata for specifying the attributes of the essence or metadata or identifying the essence is generated, and the operation of archiving the essence correlatively with the metadata is controlled using the metadata, to perform the asset management for the essence, it is possible to realize efficient processing of a sequence of operations from acquisition and creation to the editing, sending out and archiving.

According to the present invention, by creating an essence and generating metadata used for accounting for the essence, it is possible to create the project from the essence efficiently using the metadata.

Also, according to the present invention, by creating an essence, generating metadata used for accounting for the essence, and controlling an operation of post-production based on the metadata, it is possible to create the project from the essence efficiently.

Also, according to the present invention, by creating an essence, generating metadata used for accounting for the essence, and performing an operation of post-

production correlatively with the metadata, it is possible to create the project from the essence efficiently.

Also, according to the present invention, by creating an essence and generating metadata used for identifying the essence, it is possible to create the project from the essence efficiently using the metadata generated at the time of the production.

Also, according to the present invention, by creating an essence, generating metadata used for identifying the essence, and controlling an operation of post-production based on the metadata, it is possible to create the project from the essence efficiently.

Further, according to the present invention, by creating an essence, generating metadata used for identifying the essence, and performing an operation of post-production correlatively with the metadata, it is possible to create the project from the essence efficiently.

According to the present invention, by generating metadata for accounting for the essence, performing an operation of the production using the metadata, and creating the essence, it is possible to create the project from the essence efficiently.

Also, according to the present invention, by generating metadata for accounting for the essence, creating the essence and storing the essence and the metadata correlatively with each other on a recording medium, and performing an operation of production using the metadata, it is possible to create the project from the essence efficiently.

According to the present invention, by creating the essence and generating metadata used for accounting the essence, and performing control based on the metadata so that an asset management for the essence archived will be performed to archive the essence and the metadata correlatively with each other, it is possible to archive the essence efficiently.

Also, according to the present invention, in a method for archiving an essence, by creating the essence and generating metadata used for accounting the essence, performing an operation for the essence using the metadata, and archiving and essence and the metadata correlatively with each other, it is possible to archive the essence efficiently.

Also, according to the present invention, in a method for archiving an essence, by creating the essence and generating metadata used for accounting the essence, and controlling a reproducing operation for the essence archived, using the metadata, the essence and the metadata are archived correlatively with each other. Thus, it is possible to archive the essence efficiently.

Also, according to the present invention, in a method for archiving an essence, by creating the essence and generating metadata used for accounting the essence, and controlling a retrieving operation for the essence archived, using the metadata, the essence and the metadata are archived correlatively with each other. Thus, it is possible to archive the essence efficiently.

Also, according to the present invention, in a method for archiving an essence,

by creating the essence and generating metadata pertinent to the essence, and performing control, using the metadata, so that an operation for the essence archived will be performed, the essence and the metadata are archived correlatively with each other. Thus, it is possible to archive the essence efficiently.

Also, according to the present invention, in a method for archiving an essence, by creating the essence and generating metadata pertinent to the essence, and performing control based on the metadata so that an asset management for the essence archived will be performed, the essence and the metadata are archived correlatively with each other. Thus, it is possible to archive the essence efficiently.

Also, according to the present invention, in a method for archiving an essence, by creating the essence and generating metadata pertinent to the essence, and controlling a reproducing operation for the essence archived, using the metadata, the essence and the metadata are archived correlatively with each other. Thus, it is possible to archive the essence efficiently.

Also, according to the present invention, in a method for archiving an essence, by creating the essence and generating metadata pertinent to the essence, and controlling a retrieving operation for the essence archived, using the metadata, the essence and the metadata are archived correlatively with each other. Thus, it is possible to archive the essence efficiently.

According to the present invention, by creating the essence and generating metadata pertinent to the essence, and performing post-production processing on the

essence; it is possible to allot the essence efficiently using metadata generated at the time of the production.

Also, according to the present invention, by creating the essence and generating metadata pertinent to the essence, performing post-production processing on the essence, and controlling an operation of distribution, using the data, it is possible to allot the essence efficiently.

Also, according to the present invention, in a distribution method for allotting an essence, by creating the essence and generating metadata used for accounting for the essence, and performing post-production processing on the essence, it is possible to allot the essence efficiently, using the metadata generated at the time of the production.

Further, according to the present invention, in a distribution method for allotting an essence, by creating the essence and generating metadata used for accounting for the essence, performing post-production processing on the essence, and controlling an operation of the distribution, using the metadata used at the time of the production, it is possible to allot the essence efficiently.

According to the present invention, by creating the essence and generating metadata pertinent to the essence, performing post-production on the essence, and creating the package medium from an essence processed with post-production using metadata, it is possible to create a package medium efficiently from an essence.

Also, according to the present invention, by generating metadata pertinent to the

essence, creating the essence, performing post-production on the essence, and creating the package medium from an essence processed with post-production using the metadata, it is possible to create a package medium efficiently from an essence.

Also, according to the present invention, by creating the essence and generating metadata used for accounting for the essence, and creating the package medium from an essence processed with post-production, using the metadata, it is possible to create a package medium efficiently from an essence.

Further, according to the present invention, by generating metadata used for accounting for the essence, creating the essence; performing post-production on the essence, and creating the package medium from an essence processed with post-production, using metadata generated at the time of the pre-production, it is possible to create a package medium efficiently from an essence.

According to the present invention, by generating metadata indicating the rights of the essence, and performing control based on the metadata so that a circulating operation of the essence will be performed, asset management processing is effected on the essence. Thus, it is possible to manage the essence efficiently.

Also, according to the present invention, by generating metadata specifying rights pertinent to the essence, and performing control based on the metadata so that a circulation operation of the essence will be performed, asset management processing is effected on the essence. Thus, it is possible to manage the essence efficiently.

Also, according to the present invention, by generating metadata specifying

rights pertinent to the essence, and performing control based on the metadata so that a re-utilizing operation of the essence will be performed, asset management processing is effected on the essence. Thus, it is possible to manage the essence efficiently.

Also, according to the present invention, by creating the essence and generating metadata specifying rights pertinent to the essence, and performing control based on the metadata so that a re-utilizing operation of the essence will be performed, asset management processing is effected on the essence. Thus, it is possible to manage the essence efficiently.

According to the present invention, by creating the essence and for generating UMID (unique material identifier) for discriminating the essence, controlling an operation in the post-production based on the UMID, and editing the essence, the programme is generated. Thus, it is possible to create the programme efficiently from the essence.

Also, according to the present invention, by creating the essence and for generating UMID (unique material identifier) for discriminating the essence, controlling an archiving operation of archiving an essence generated by production processing and/or an essence processed with post-production based on the UMID, and editing the essence, the programme is generated. Thus, it is possible to create the programme efficiently from the essence.

According to the present invention, by generating a plurality of metadata which are data pertinent to the essence and which are respectively identified by SMPTE

(Society of Motion Picture and Television Engineers) labels, receiving the essence and the plural metadata and analyzing the SMPTE labels to extract pre-set metadata from the plural metadata, and controlling the processing relevant to the essence based on the extracted metadata, it is possible to create the essence efficiently.

Also, according to the present invention, by generating a plurality of metadata which are data pertinent to the essence and which are respectively identified by SMPTE (Society of Motion Picture and Television Engineers) labels, receiving the essence and the plural metadata and analyzing the SMPTE labels to extract pre-set metadata from the plural metadata, and controlling the production processing performed on the essence based on the extracted metadata, it is possible to create the essence efficiently.

Also, according to the present invention, by generating a plurality of metadata which are data pertinent to the essence and which are respectively identified by SMPTE (Society of Motion Picture and Television Engineers) labels, receiving the essence and the plural metadata and analyzing the SMPTE labels to extract pre-set metadata from the plural metadata, and controlling the post-production processing performed on the essence based on the extracted metadata, it is possible to create the essence efficiently.

Also, according to the present invention, by generating a plurality of metadata which are data pertinent to the essence and which are respectively identified by SMPTE (Society of Motion Picture and Television Engineers) labels, receiving the

essence and the plural metadata and analyzing the SMPTE labels to extract pre-set metadata from the plural metadata, and controlling the archiving processing performed on the essence based on the extracted metadata, it is possible to create the essence efficiently.

Further, according to the present invention, by generating a plurality of metadata which are data pertinent to the essence and which are respectively identified by SMPTE (Society of Motion Picture and Television Engineers) labels, receiving the essence and the plural metadata and analyzing the SMPTE labels to extract pre-set metadata from the plural metadata, and controlling an operation for asset management performed on the essence based on the extracted metadata, it is possible to create the essence efficiently.